Private Property, Public Interest

by Eric M. Winford

The Fish and Wildlife Service would like to recognize and thank Steve and Margaret Cunningham (above), Bud Clayborne, Gary Moore, Pat Rakes, and members of the Barrens Topminnow Working Group for their efforts to recover the Barrens topminnow.

Opposite page: Springs on the Cunningham (left) and Clayborne farms were set aside as habitat for the Barrens topminnow (inset).
USFWS photos

A joke told around farming communities goes something like this: A farmer is hard at work in his field when a man drives up to his house. The farmer goes over to shake the man's hand and see what he wants. The man notices how hard the farmer is working and says he would like to help. Then he identifies himself as a government employee and the farmer turns around and runs away.

Steve and Margaret Cunningham didn't run away when they were approached by representatives of the U.S. Fish and Wildlife Service (FWS) for the possible use of their land. Why? "We're willing to do what's right if people approach us right," Steve says. What is right used to be the operation of their 400-acre (160 hectare) farm in Coffee County, Tennessee, and the 350 head of cattle that live on it. Now it includes the welfare of an extremely rare fish.

The Barrens topminnow *(Fundulus julisia)*, recognized by the FWS as a species of management concern, exists only in the headwaters and tributaries of the Duck, Elk, and Caney Fork rivers in the Barrens region of Coffee, Cannon, and Warren counties in Tennessee. It was first identified as a distinct species in 1983 by University of Tennessee professor David Etnier. At that time, it was known to exist in 14 areas, but by 1997, only two sites were known to have viable populations. Both sites are on private property in Coffee County.

The Barrens topminnow is usually found in calm, spring-fed headwaters with water temperatures around 60° F (15° C). This fish uses aquatic vegetation found in the springs as sites to lay its eggs. The increased use of the springs by cattle, the construction of ponds, and development in the area have all contributed to the deterioration of water quality and the destruction of topminnow habitat. Periodic droughts and increased use of ground water for irrigation have also been linked to the reduction in the number of suitable sites.

"The Barrens topminnow is very rare and we are looking for ways to work cooperatively with private landowners to protect the fish and its habitat," says Brad Bingham, Tennessee Coordinator of the Partners for Fish and Wildlife Program. Bingham works for the FWS in the Cookeville, Tennessee, Ecological Services Field Office.

Private landowners often believe that the presence of a rare species on their property will require costly changes to their land use activities. "Through our efforts with the topminnow and other species, we are trying to eliminate this misconception," Bingham says.

The Cookeville office was already working in the watershed to protect the Cumberland pigtoe mussel *(Pleurobema furvum)*, an endangered species, and recognized several possible sites that could provide habitat for the topminnow. Combining resources with the Tennessee Wildlife Resources Agency, the Tennessee Chapter of The Nature Conservancy, and the Natural Resources Conservation Service (NRCS), the team started contacting landowners for potential interest in conserving topminnow habitat. Gary Moore of the NRCS was instrumental in approaching farmers in Coffee County and arranging face-to-face meetings.

The Cunninghams would probably never have worked with the program if Moore had not taken the time to reach them on a personal level. "It wasn't the

program, it was the people we were working with," Steve says.

Once initial contact was made with the Cunninghams and other farmers in the region, the next step was to show the farmers how their joint interests in the environment could work together. If the springs on their property were to be used for the topminnow, the cattle would have to drink elsewhere. With the help of the FWS and NRCS, tanks were installed at various locations around the Cunningham's farm.

"If you show farmers that your goals and their goals are the same, a lot of people will do these things," Steve says. The Cunninghams not only wanted to preserve their farm but also the environment and associated wildlife. "We're trying to look at everything in a long-term view," Steve says. Now Margaret is thinking about bringing school classes to the restored site to show children a little slice of nature.

Five other landowners within the watershed have joined in the partnership to establish habitat for the topminnow and improve water quality for the endangered Cumberland pigtoe mussel. One of the other partners is Bud Clayborne. Clayborne raises cattle on the 70-acre (28-hectare) farm that he grew up on near the town of Viola in Coffee County. Memories of his early life on the farm make it special to him. When he volunteered for the topminnow program, he saw an opportunity to recreate the farm of his childhood. Clayborne remembers drinking water from a spring near his house and decided that the unused spring could be turned back into his water supply.

In the summer of 1998, a severe drought in the region forced Clayborne to water his cattle at the spring. He dug a shallow pool beside the spring to trap and keep water during the drought. In 1999, the FWS saw the possibility of turning Clayborne's spring and the adjacent pool into topminnow habitat. In return for the use of Clayborne's property, the FWS paid for a fence to exclude cattle from the spring and installed water tanks for Clayborne's cattle.

Clayborne was glad to allow the FWS the use of his spring. The cattle now use the water tanks while Clayborne can use the spring for his own water. "It's pretty much a win-win situation for both of us," Clayborne says. "To me, it's help."

At Clayborne's property, one of the first springs that the topminnow will be introduced to, the FWS dug three pools of varying depths in order to see what type of habitat the topminnow prefers. To reduce competition for the topminnow, most of the western mosquitofish *(Gambusia affinis)*, a non-native species that had been introduced earlier into the spring, were removed. The mosquitofish is the topminnow's main competitor for food and living space.

In addition to the two populations in the wild, the topminnow is now being held and bred at Conservation Fisheries, Inc. (CFI), a Knoxville-based non-profit firm that deals with rare fish in the southeast; the Tennessee Aquarium; and the Dale Hollow National Fish Hatchery. In the summer of 2001, Pat Rakes, co-director of CFI, will stock 40 to 50 topminnows in Clayborne's spring. The FWS hopes to eventually have five viable populations in each of the region's three river systems. The goal is to establish suitable habitats throughout each watershed to allow the topminnow to migrate from one site to another. After the release of the topminnow into these areas, efforts will be made to monitor the fish to determine the success of the reintroductions.

"We're hoping that if water quality improves enough, they'll be able to compete without any help," Rakes says. The topminnow is a good water-quality indicator, and having the species back in the environment will show that the area is healthy.

It will also prove that private landowners and government agencies can work together to accomplish their common goals.

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